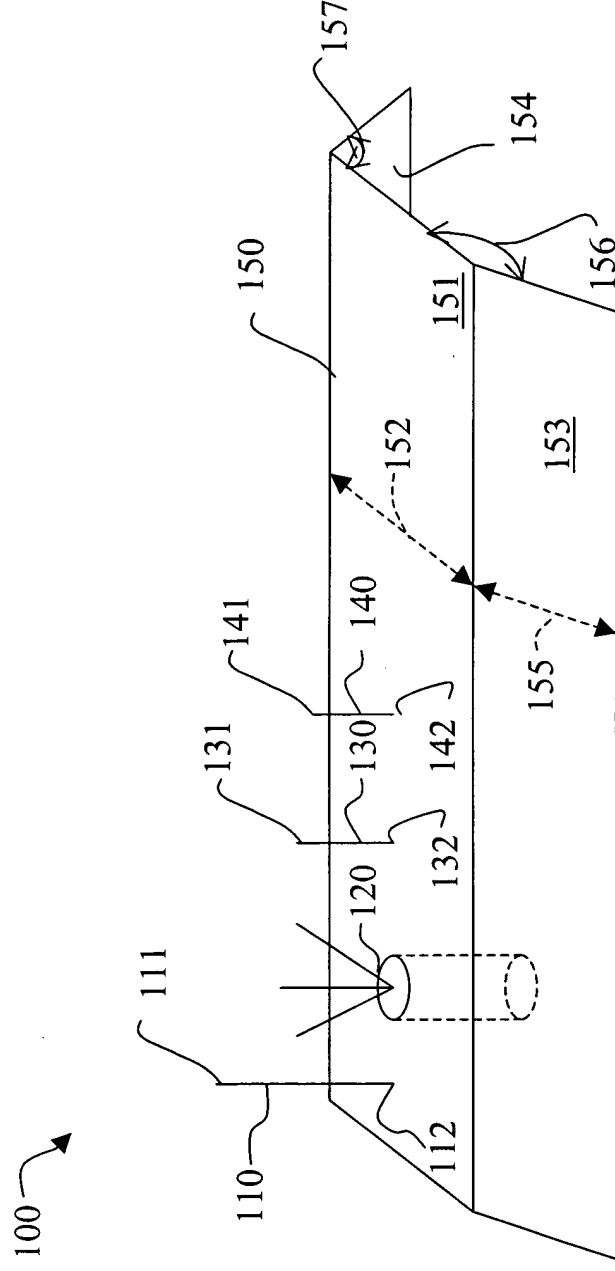


**FIG. 1**



4-element beam antenna  
with a multi-polarized tri-element driver

FIG. 2

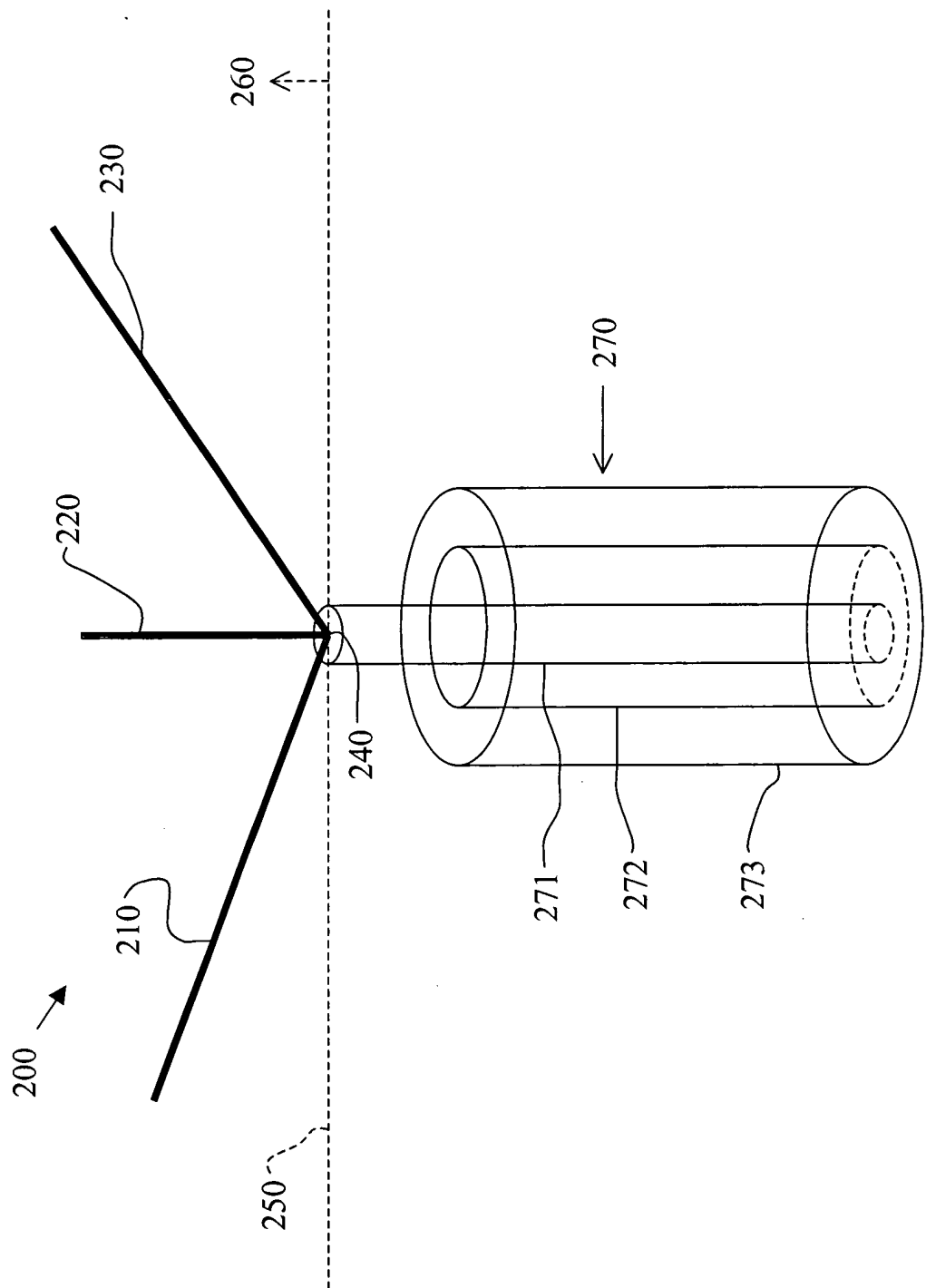


FIG. 3

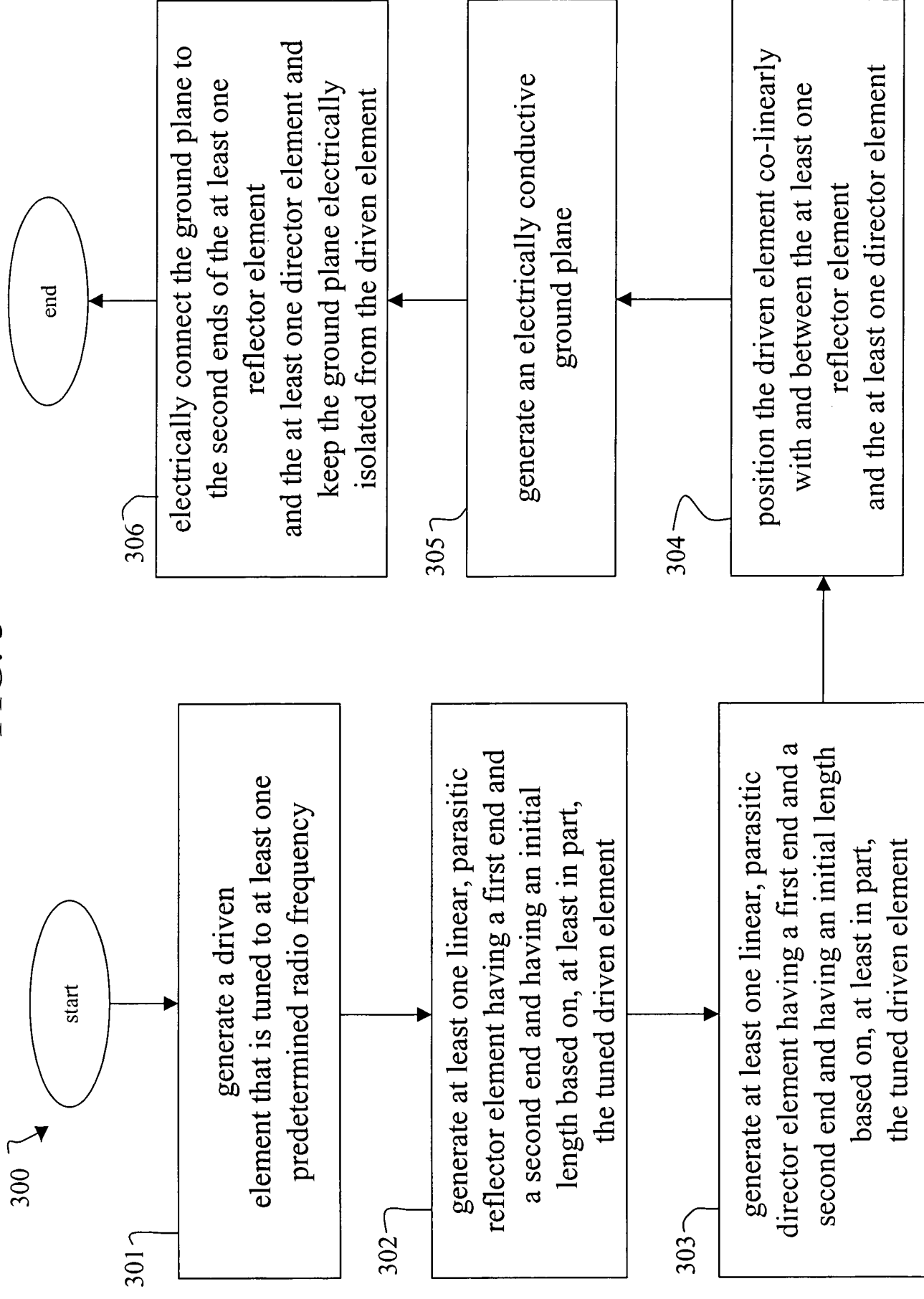
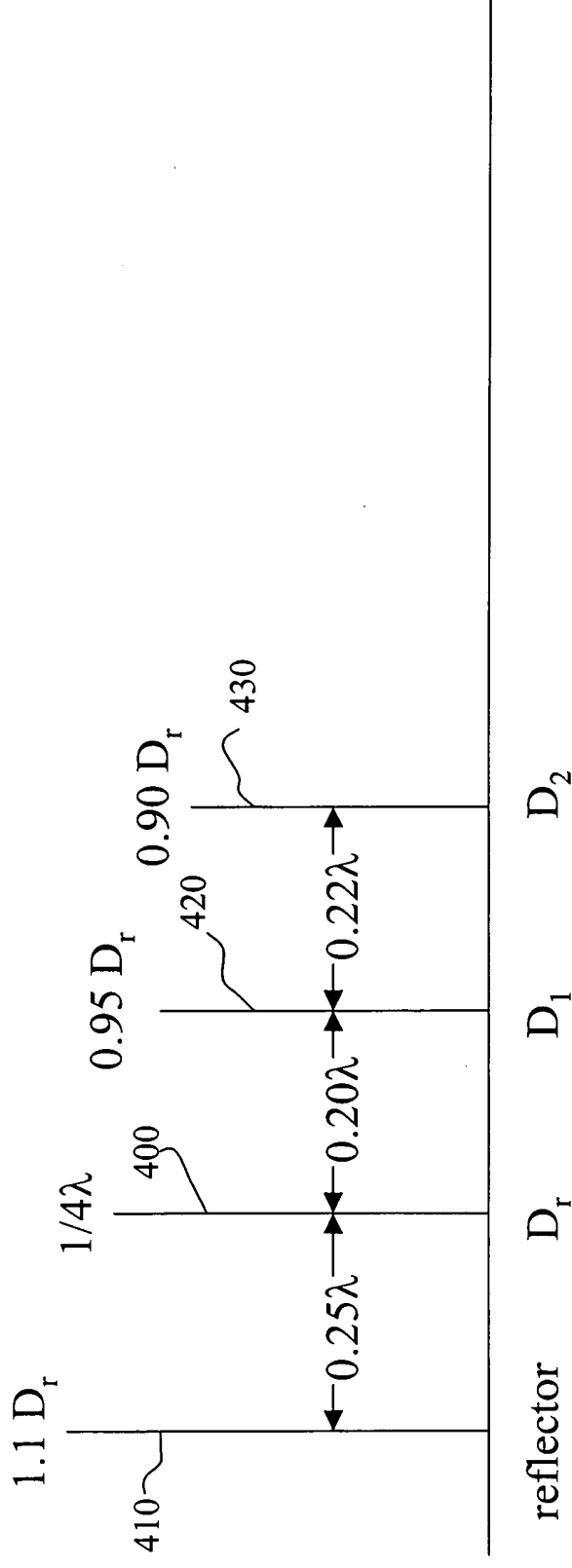


FIG. 4  
re-adjustment of antenna elements



$$D_{1(\text{adjusted})} = 0.95 * [984/f(\text{MHz})] * (1/4) * (12) * (\text{k-factor})$$

$$* [1 - [(1-P)_{\text{of } 0.45\lambda} * (1.1/0.95)]]$$

$$* [1 - [(1-P)_{\text{of } 0.20\lambda} * (1.0/0.95)]]$$

$$* [1 - [(1-P)_{\text{of } 0.22\lambda} * (0.9/0.95)]]$$

where  $D_r = 1/4 * [984/f(\text{MHz})] * 12 = 1/4 \lambda$  in inches

FIG. 5

K-FACTOR

500

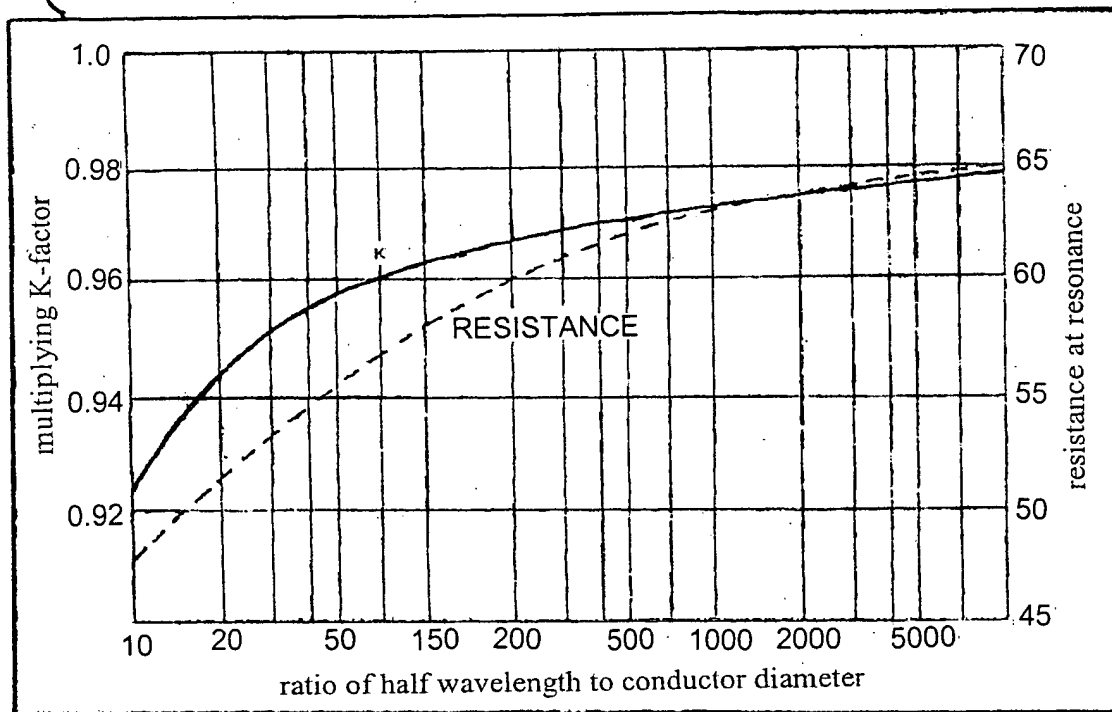


FIG. 6

(1-P) CURVE

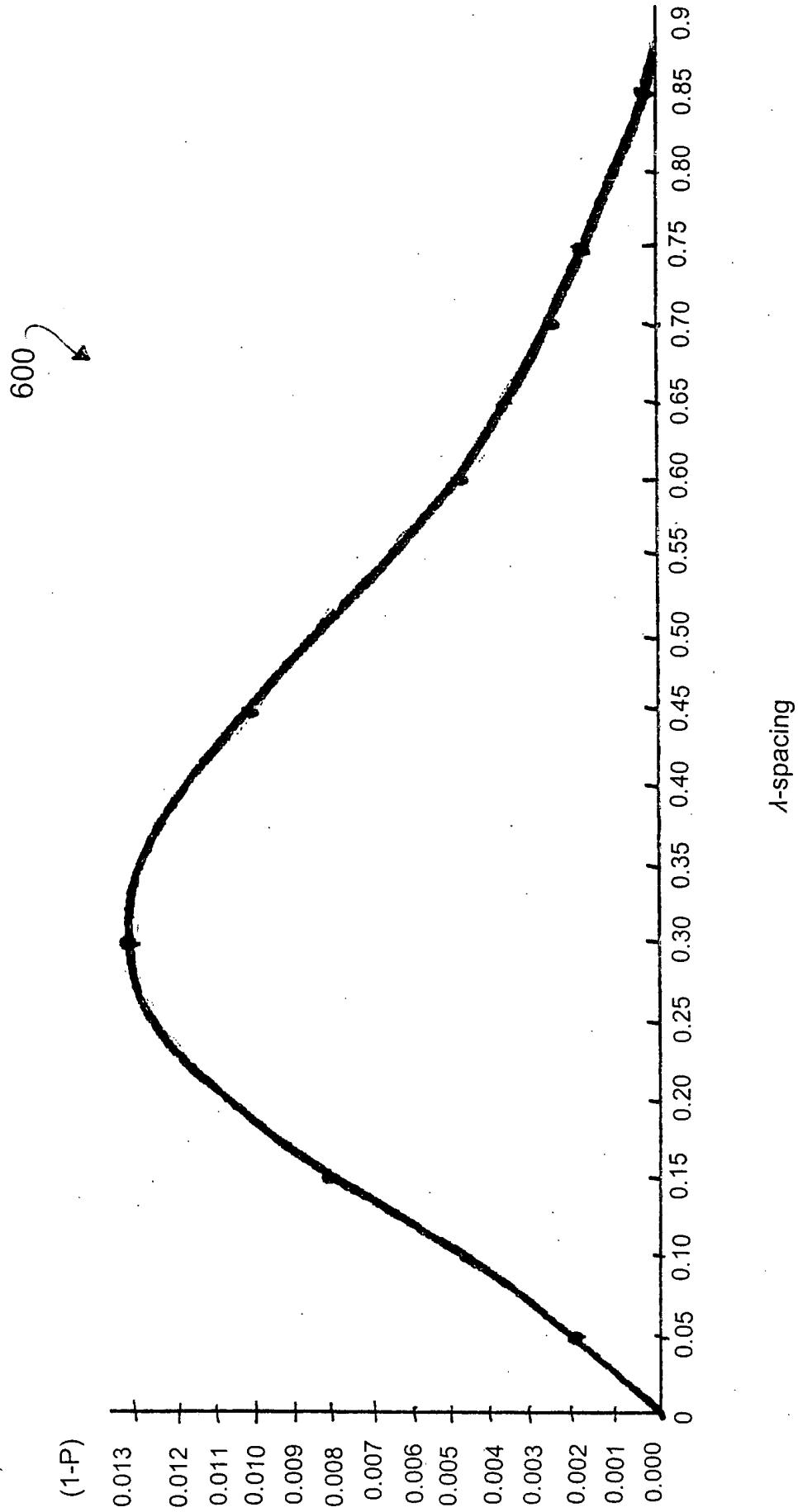


FIG. 7

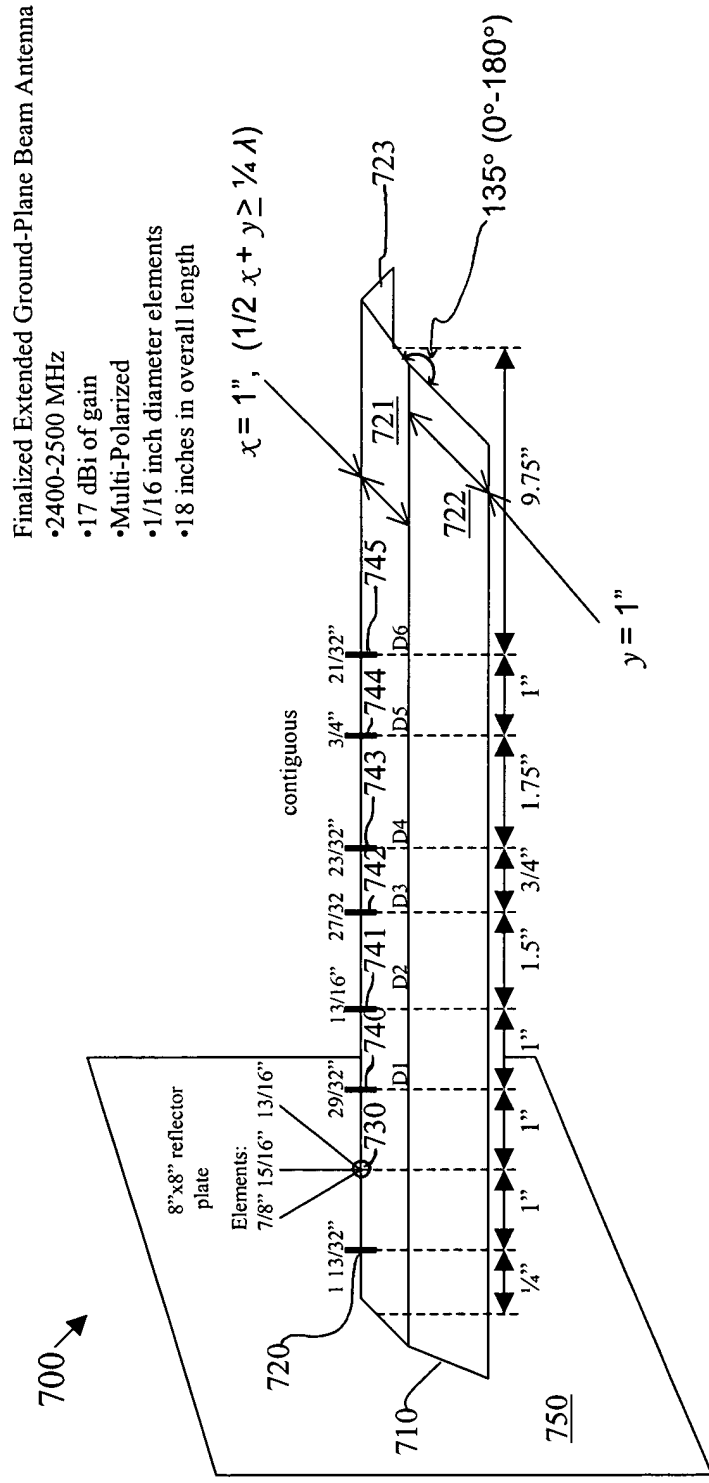
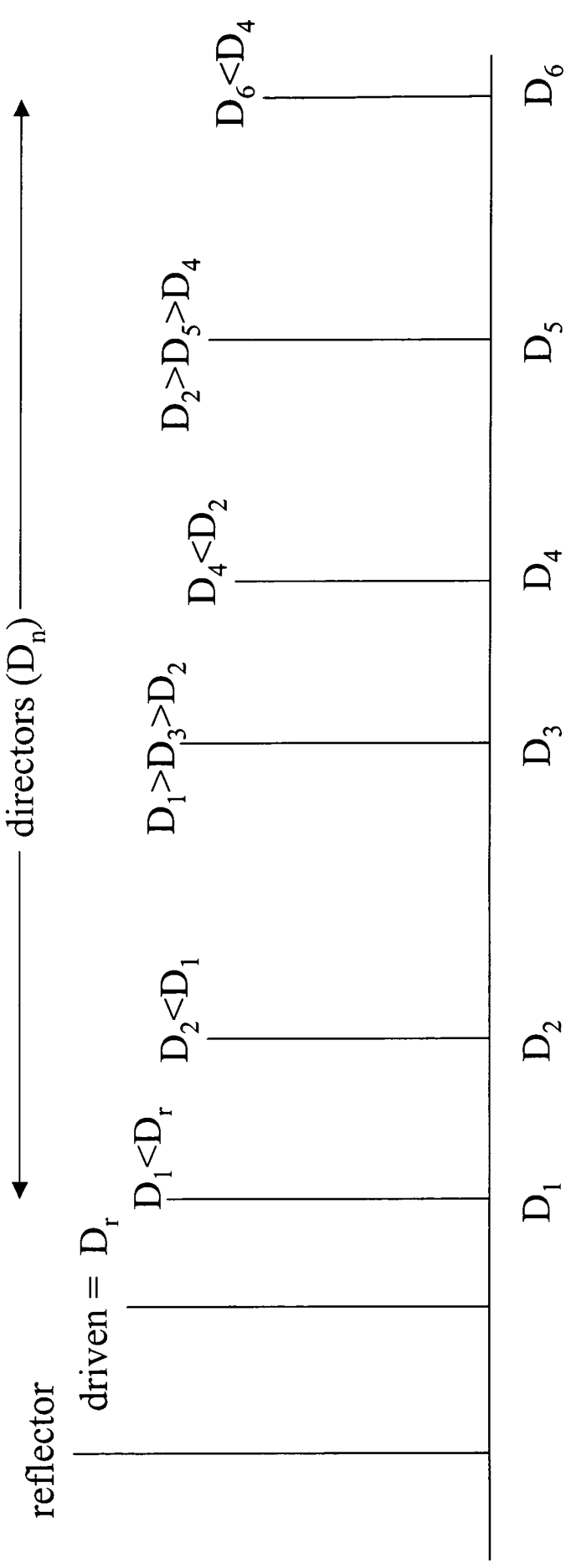


FIG. 8



For odd  $> 1$ :

- the spacing between director elements  $D_{\text{odd}}$  and  $D_{\text{odd}-1}$  is greater than the spacing between director elements  $D_{\text{odd}-1}$  and  $D_{\text{odd}-2}$
- the length ( $D_{\text{odd}} - D_{\text{odd}-1}$ ) is less than the length  $\frac{1}{2} (D_{\text{odd}-2} - D_{\text{odd}-1})$
- the spacing between director elements  $D_{\text{odd}}$  and  $D_{\text{odd}-1}$ , and  $D_{\text{odd}-2}$  and  $D_{\text{odd}-1}$  increase the further the director elements get from the driven element  $D_r$



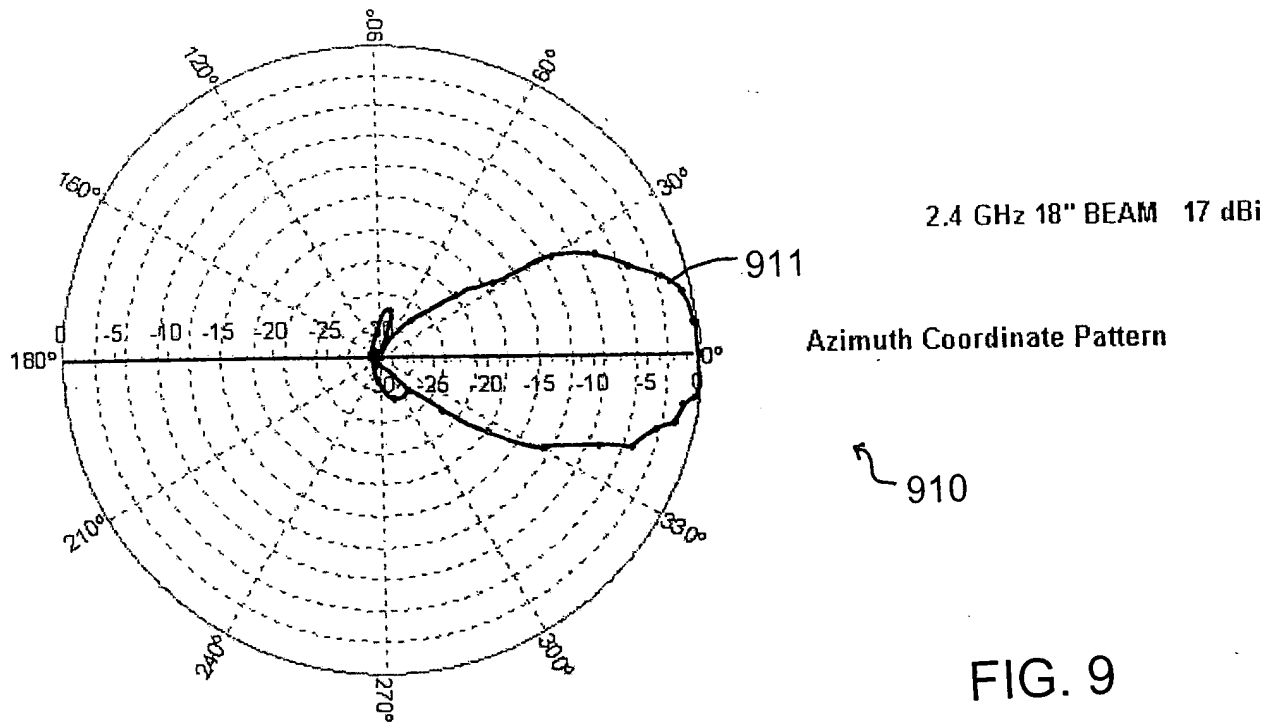


FIG. 9

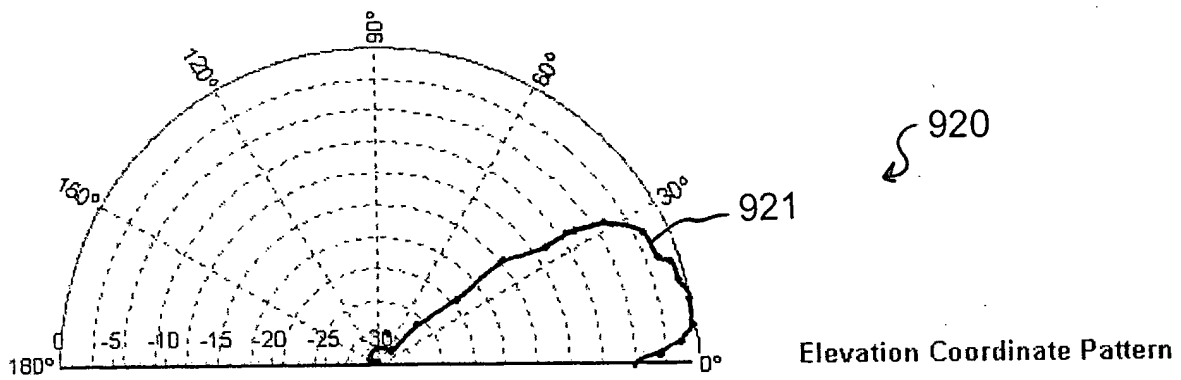


FIG. 10A

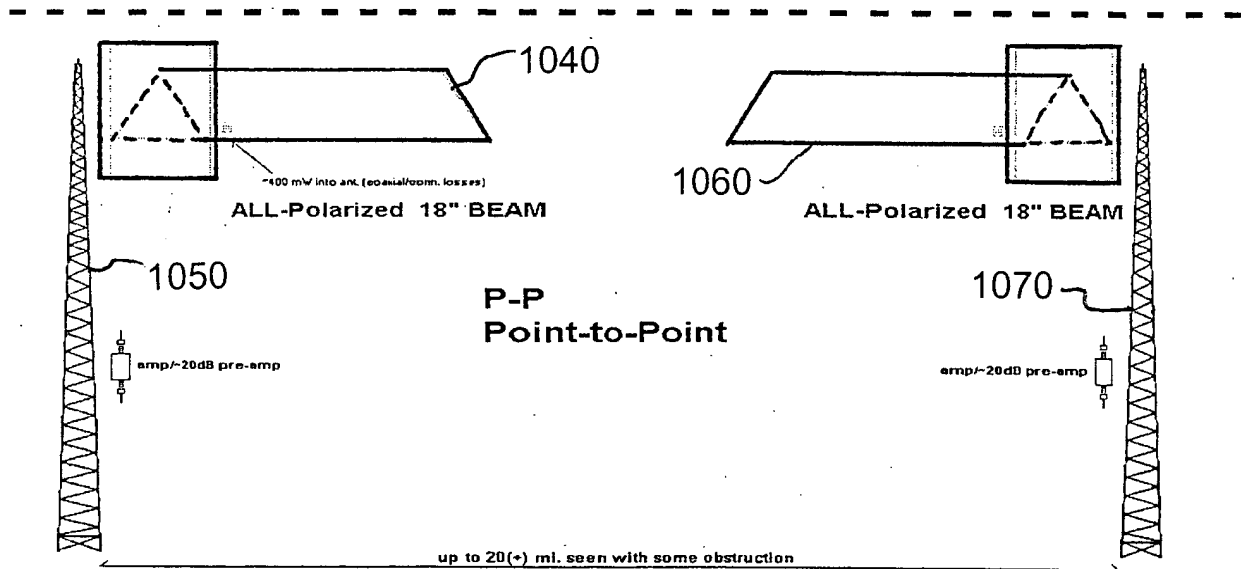
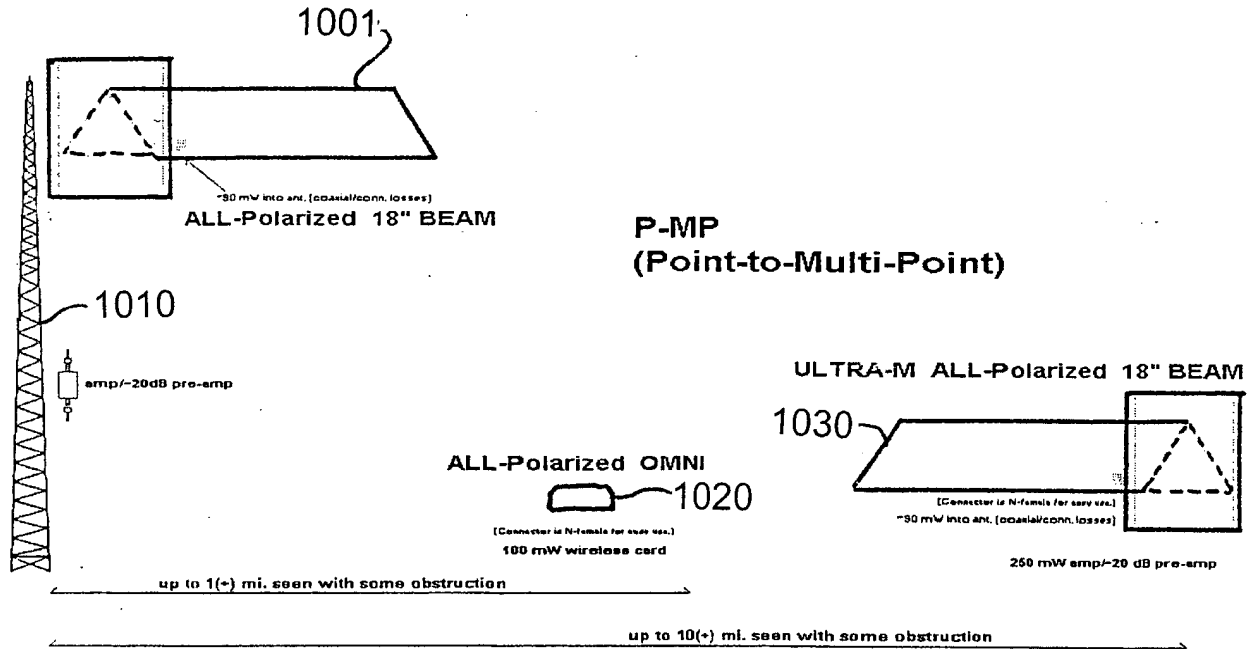


FIG. 10B

FIG. 11

1100

1101

1102

1103

1104

1105

FIG. 12

